Claims:-

1. A solid oxide fuel cell stack (10) comprising a plurality of modules (12), each module (12) comprising an elongate hollow member (14), each hollow member (14) having at least one passage (32) extending longitudinally through the hollow member (14) for the flow of a reactant, each hollow member (14) having two parallel flat surfaces (16,18), at least one of the modules (12A,12B,12C) including a plurality of solid oxide fuel cells (20), the solid oxide fuel cells (20) being arranged on at least one of the flat surfaces (16,18) of the at least one module (12A,12B,12C), the surfaces (16,18) of adjacent modules (12A,12B,12C) being arranged substantially parallel and spaced apart, characterised in that at least one end (34) of each module (12) being connected to an end (36) of an adjacent module (12) to allow reactant to flow sequentially through the modules (12) and such that thermal and mechanical stresses in the solid oxide fuel cell stack (10) are reduced.

2. A solid oxide fuel cell stack as claimed in claim 1 comprising a manifold (38) for the supply of a reactant and a manifold (40) for the removal of the reactant, each module (12) having a first end (34) and a second end (36), the first end (34) of a first one of the modules (12A) being connected to the manifold (38) for the supply of reactant to the first one of the modules (12A), the second end (36) of a second one of the modules (12B) being connected to the manifold (40) for the removal of reactant from the second one of the modules (12B), the second end (36) of the first one of the modules (12A) being connected to the first end (34) of an adjacent module (12C), the first end (34) of the second one of the modules (12B) being connected to the second end (36) of an adjacent module (12C).

3. A solid oxide fuel cell stack as claimed in claim 2 wherein the second end (36) of the first one of the modules

(12A) being connected to the first end (34) of the second one of the modules (12C).

4. A solid oxide fuel cell stack as claimed in claim 1, claim 2 or claim 3 wherein each hollow member (14) has a plurality of passages (32).

5. A solid oxide fuel cell stack as claimed in any of claims 1 to 4 wherein at least one hollow member (14) has a different length to the remainder of the hollow members (14).

6. A solid oxide fuel cell stack as claimed in any of claims 1 to 5 wherein the at least one module (12) includes a plurality of fuel cells (20) on both of the flat surfaces (16,18) of the module (12).

7. A solid oxide fuel cell stack as claimed in any of claims 1 to 6 wherein each module (12) includes a plurality of solid oxide fuel cells (20).

8. A solid oxide fuel cell stack as claimed in any of claims 1 to 7 wherein at least one of the modules (112E) comprises a heat exchanger (121).

9. A solid oxide fuel cell stack as claimed in any of claims 1 to 7 wherein at least one of the modules (112F) comprises a fuel reformer (123).

10. A solid oxide fuel cell stack as claimed in claim 9 wherein the at least one module (112F) has a catalyst (144) arranged in the at least one passage (132) through the hollow member (114).

11. A solid oxide fuel cell stack as claimed in claim 10 wherein the catalyst (144) is arranged on the surfaces of the at least one passage (132) through the hollow member (114).

12. A solid oxide fuel cell stack as claimed in any of claims 1 to 11 wherein a member (146) is arranged in the at least one passage (132) through the hollow member (114).

13. A solid oxide fuel cell stack as claimed in claim 12 wherein the member (146) is a coil of wire.

14. A solid oxide fuel cell stack as claimed in claim 12 wherein the member (146) is arranged and configured to define a helical flow path through the passage (132) with the hollow member (114).

15. A solid oxide fuel cell stack as claimed in claim 12, claim 13 or claim 14 wherein a catalyst (144) is arranged on the member (146).

16. A solid oxide fuel cell stack as claimed in any of claims 1 to 15 wherein each module (12) is connected to an adjacent module (12) by an end cap or by a spacer.

17. A solid oxide fuel cell stack as claimed in any of claims 1 to 16 wherein the centre lines (x) of adjacent modules (12A,12B) are arranged substantially in the same plane to form an undulating arrangement of modules (12).

18. A solid oxide fuel cell stack as claimed in any of claims 1 to 16 wherein the centre lines (x) of adjacent modules (312A,312B) are arranged in different planes to form a helical arrangement of modules (312).

19. A solid oxide fuel cell stack as claimed in claim 18 wherein the centre lines (x) of adjacent modules (312A,312B) are arranged at an angle of 45°, 60°, 72° or 90°.

20. A solid oxide fuel cell stack as claimed in any of claims 1 to 19 wherein at least one damping member (37A,37B,37C) is arranged between adjacent modules (12).

21. A solid oxide fuel cell stack as claimed in claim 20 wherein the damping member (37A,37B,37C) is a resilient corrugated member (37A), or a resilient C shaped member (37B).

22. A solid oxide fuel cell stack as claimed in claim 20, or claim 21 wherein the damping member (37A,37B,37C) is metallic (37A,37B).

23. A solid oxide fuel cell stack as claimed in claim 22 wherein the damping member (37A,37B) has an electrically insulating coating.

24. A solid oxide fuel cell stack as claimed in any of claims 1 to 23 wherein each solid oxide fuel cell (20)

comprises an anode electrode (22), a cathode electrode (26) and a solid oxide electrolyte (24).

25. A solid oxide fuel cell stack as claimed in claim 24 wherein the anode electrodes (22) are arranged on the flat surfaces (16,18) of the elongate hollow member (14).

26. A solid oxide fuel cell stack as claimed in any of claims 1 to 25 wherein the at least one passage (32) of at least one of the elongate hollow members (14) has a varying cross-sectional area throughout its length.